

REMARKS

In the amendments above claims 9, 12, 18, 24 and 30 have been amended to define the present invention with improved clarity and greater specificity of the structural limitations, which will be described in further detail later, and new claim 31 is added.

I. Election/Restriction Requirement

The first issue in the outstanding Office Action found in paragraph No. 17 thereof concerns the withdrawal of claims 18 - 30, as being directed to a non-elected invention. This withdrawal is believed incorrect and is respectfully traversed.

This withdrawal asserted under upon 37 C.F.R. 1.142 (b) pertaining to non-elected inventions. Restriction was not previously made. The Examiner's basis for restriction is that claims 18 - 30 submitted in applicant's last response are directed to an invention that lacks unity with the invention originally claimed. The objection asserts that means for circulation (in claims 18 - 30) is not required for the invention encompassed by claims 9 - 17, which replace original claims 1-8, and since this special technical feature (circulation), is absent in claims 9 - 17 there is a lack of unity is with claims 18 - 30.

It should be noted that original claim 7 in this application did include after the "characterized" term "means for circulation," and this is supported in the specification, means 16 for admitting a flow of air coming from a source external to the protection element (forced ventilation), a diffusion zone 17a, discontinuous stitching 19, a collector zone 20, and means for exhausting the flow of air 21. This is a complete circulation system. The concept of "circulation means" was included in the original claims and its inclusion in claims 18-30 essentially adds a limitation to claims 1 - 17, thus rendering them equivalent to dependent claims and not a separate invention.

Not only was circulation means included in the original claims, it is an integral part of the principle prior art reference to Klein, which states in column 4, lines 5 - 38 "air from the air source not shown passes through the external supply lead system...", and in column 3, lines 3 - 7 "the in-flow stem of the manifold..." Since this circulation concept was present in the original claims and present in the principal prior art reference and is not a

separate invention and apparently was covered by the prior art search, withdrawal of the restriction requirement is earnestly requested.

Notwithstanding the above arguments, the restriction issue herein is believed to be further resolved by the amendment to independent claims 18 and 24 and all the other claims dependant thereon, to more specifically claim a protective garment operable with circulation means. Original claim 24 is re-written as new claim 31 to further define the present invention.

II. 35 U.S.C. 102(b) Rejection

Claims 9 and 10 have been rejected under 35 U.S.C. 102(b) as being anticipated by the Klein reference. This rejection is respectfully traversed as regards claims 9 and 10, and as regards claims 18-31, assuming the restriction requirement is withdrawn.

Klein is cited for its outer layer (hydrophobic layer), inner layer (hydrophilic) “and a plurality of cords are spaced apart on and sewn (like the link threads interconnecting the hydrophobic layer and the hydrophilic layer) at intervals to the inner liner” (column 1, lines 23 - 26).

It is respectfully submitted that the cords in Klein are not the same as or equivalent to or suggestive of the link threads in the present invention. The cords 18 in Klein as seen in Fig. 4 (which is a transverse section through the fabric), extend generally vertically between the layers 12 and 14, and thus these cords lie in a plane parallel to and between the planes of the front and rear fabric layers.

In the present invention, the link threads extend transversely of the inner and outer layers, and extend in a generally lengthwise direction between and connecting the front and rear layers respectively. In one embodiment these link threads extend not only transversely to these layers, but in a perpendicular direction thereto, as noted in page 3, column 26. These link threads provide good strength against compression of the fabric in the direction which helps maintain the inner and outer layers separated from each other, thus enhancing air circulation, as discussed on page 3, lines 10-30 in the specification. Also,

as stated on page 3, lines 33 - 34 of the specification "the link threads pick up liquid sweat and enhance evaporation thereof.

Furthermore, the link threads of the present invention not only provide strength against compression of the layers of woven material, but also absorb liquid sweat, providing a function which enhances the effectiveness of the ventilation. See Specification, p. 3, lines 33-34. On the other hand, there is no such teaching for the cords disclosed in the Klein '396 Patent. The cords sole purpose are to maintain space. See the Klein '396 Patent, col. 2, lines 3-17. In Klein the stitching 22 joins layers, whereas in the present invention the link threads help maintain the layers separated.

In summary, the present invention defines a structure that is so different from Klein that independent claim 9 and claims 10-17 dependent thereon cannot be said to read on Klein.

III. 35 U.S.C. 103(a) Rejection

The remaining rejection is seen in paragraph No. 19 on page 4 of the office action, stating that claims 9 - 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gehse. This rejection is respectfully traversed as regards claims 9-17 and as regards claims 18-31, assuming the restriction requirement is withdrawn.

The Gehse reference is cited with reference to col. 3, lines 59-60: (a) for its outer layer, inner layer, a spacer layer 120 and "joining of the layers . . . by an interconnection" and (b) "the layers may be attached by a touch and close fastener or attachment which could be yarns interlinked by stitching threads."

It appears that the underlined phrase immediately above "which could be yarns interlinked by stitching threads" is speculation and was not so stated in the Gehse reference. Also, the other underlined phrase immediately above "joining of the layers . . . by an interconnection" was followed in the Gehse text by "in the manner of cells." Applicant respectfully submits that Gehse does not teach attachment by link threads or by anything equivalent. The claim structure is further remote by use of linking threads that extend transversely and lengthwise between the layers as contrasted with extending in a

plane parallel to the layers. The Gehse reference has no link threads and specifically no transversely extending threads, but instead has a spacer layer formed of a cellular structure which is totally different and non-suggestive of the structure now claimed. Accordingly, it is believed that this reference cannot support a rejection on any of the pending claims based on obviousness.

CONCLUSION

In view of the above, it is respectfully submitted that the new Claims 9-31 patentably distinguish over the Examiner's cited references. As the Applicant believes that the Application overcomes or traverses each of the Examiner's objections, early allowance and issuance is, accordingly respectfully solicited.

PETITION FOR A ONE-MONTH EXTENSION OF TIME

Applicant hereby petitions for a one-month extension of time extending the period for a response to June 27, 2002. Enclosed is a check for \$55.00 to cover the one-month extension of time fee for a small entity. If any other extensions of time are required to preserve the pendency of this Application, such extension is hereby requested.

CHARGE DEPOSIT ACCOUNT

Please charge any outstanding amount or credit any overpayment to Deposit Account of the undersigned attorneys, Account No. 01-1785.

Respectfully submitted,

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REDLINED VERSION OF AMENDED AND ADDED CLAIMS

9. A three-dimensional composite textile material for protecting a body against heat comprising:

[a layer of hydrophobic woven material;

a layer of hydrophilic woven material separated from said layer of hydrophobic woven material; and

link threads interconnecting said layers of hydrophobic and hydrophilic woven materials, and extending generally cross-wise to said layers of hydrophobic and hydrophilic woven materials.]

a 1st layer formed of hydrophobic woven material;

a 2nd layer formed of hydrophilic woven material situated generally parallel to and spaced from said 1st layer, with an intermediate air space defined between said 1st and 2nd layers; and

a plurality of link threads spaced apart from each other, each of said link threads, extending generally transverse of said 1st and 2nd layers and extending generally lengthwise between and connecting said 1st and 2nd layers.

12. A three-dimensional composite textile material for protecting a body against heat comprising:

[layer of hydrophobic woven material;

a first layer of hydrophilic woven material separated from said layer of hydrophobic woven material;

a second layer of hydrophilic woven material spaced from said layer of hydrophobic woven material and said first layer of hydrophilic woven material and located intermediate said layer of hydrophobic woven material and said first layer of hydrophilic woven material; and

link threads interconnecting said layer of hydrophobic woven material and said second layer of hydrophilic woven material, and extending generally cross-wise to

said layer of hydrophobic woven material and said second layer of hydrophilic woven material, and supporting said second layer of hydrophilic woven material in a position intermediate said layer of hydrophobic woven material and said first layer of hydrophilic woven material.]

a 1st layer formed of hydrophobic woven material;

a 2nd layer formed of hydrophilic woven material situated generally parallel to and spaced from said 1st layer;

a third layer formed of hydrophilic woven material located between and spaced from both said 1st and 2nd layers; and

a plurality of link threads spaced apart from each other, each of said link threads extending generally transverse of said 1st and 3rd layers and extending generally lengthwise between and connecting said 1st and 3rd layers and supporting said 3rd layer in a position intermediate said 1st and 2nd layers, thereby defining a continuous first air space between said 2nd and 3rd layers and a discontinuous second air space interrupted by said plurality of link threads between said 1st and 3rd layers.

18. [A system for protecting a body from adverse environmental conditions comprising:

a layer of hydrophobic woven material;

a layer of hydrophilic woven material separated from said layer of hydrophobic woven material;

link threads interconnecting said layers of hydrophobic and hydrophilic woven materials, and extending generally cross-wise to said layers of hydrophobic and hydrophilic woven materials; and

means for circulating air through said materials.]

A garment for protecting a body from adverse environmental conditions, said garment operable with air circulation means, said garment constructed from fabric comprising:

a 1st layer formed of hydrophobic woven material;

a 2nd layer formed of hydrophilic woven material situated generally parallel to and spaced from said 1st layer, with an intermediate air space defined between said 1st and 2nd layers; and

a plurality of link threads spaced apart from each other, each of said link threads extending generally transverse of said 1st and 2nd layers and extending generally lengthwise between and connecting and 1st and 2nd layers, said air circulation means communicating with said intermediate air space.

24. [A system for protecting a body from adverse environmental conditions comprising:

a layer of hydrophobic woven material;

a first layer of hydrophilic woven material separated from said layer of hydrophobic woven material;

a second layer of hydrophilic woven material spaced from said layer of hydrophobic woven material and said first layer of hydrophilic woven material and located intermediate said layer of hydrophobic woven material and said first layer of hydrophilic woven material;

link threads interconnecting said layer of hydrophobic woven material and said second layer of hydrophilic woven material, and extending generally cross-wise to said layer of hydrophobic woven material and said second layer of hydrophilic woven material, and supporting said second layer of hydrophilic woven material in a position intermediate said layer of hydrophobic woven material and said first layer of hydrophilic woven material; and

means for circulating air through said materials.]

A garment for protecting a body from adverse environmental conditions, said garment operable with air circulation means, said garment constructed from fabric comprising:

a 1st layer formed of hydrophobic woven material;

a 2nd layer formed of hydrophilic woven material situated generally

parallel to and spaced from said 1st layer;

a third layer formed of hydrophilic woven material located between and spaced from both said 1st and 2nd layers; and

a plurality of link threads spaced apart from each other, each of said link threads extending generally transverse of said 1st and 3rd layers and extending generally lengthwise between and connecting said 1st and 3rd layers and supporting said 3rd layer in a position intermediate said 1st and said 2nd layers, thereby defining a continuous 1st air space between said 2nd and 3rd layer and a discontinuous 2nd air space interrupted by said plurality of link threads between said 1st and 3rd layers, said air circulation means communicating with said 1st and 2nd air spaces.

30. The system of claim [27], 29 further comprising a collector zone located intermediate said entrance coupling and said exit coupling for collecting the flow of air circulated through the system.

31. (New) A system for protecting a body from adverse environmental conditions, comprising a garment for encompassing a portion of a body and an air circulation means, said garment constructed from fabric comprising:

a 1st layer formed of hydrophobic woven material;

a 2nd layer formed of hydrophilic woven material situated generally parallel to and spaced from said 1st layer;

a third layer formed of hydrophilic woven material located between and spaced from both said 1st and 2nd layers; and

a plurality of link threads spaced apart from each other, each of said link threads extending generally transverse of said 1st and 3rd layers and extending generally lengthwise between and connecting said 1st and 3rd layers and supporting said 3rd layer in a position intermediate said 1st and said 2nd layers, thereby defining a continuous 1st air space between said 2nd and 3rd layer and a discontinuous 2nd air space interrupted by said plurality of link threads between said 1st and 3rd layers, said air circulation means communicating with said 1st and 2nd air spaces.